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**ECONOMIC INTELLIGENCE REPORT**

**POLICIES AND CAPABILITIES  
OF CZECHOSLOVAK CIVIL AVIATION**



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ECONOMIC INTELLIGENCE REPORT

POLICIES AND CAPABILITIES OF CZECHOSLOVAK CIVIL AVIATION

CIA/RR 143

(ORR Project 43.1953)

CENTRAL INTELLIGENCE AGENCY

Office of Research and Reports

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FOREWORD

The recent development of new transport aircraft in the USSR, together with the growing interest of members of the Sino-Soviet Bloc in seeking to expand their airline routes beyond the Bloc, necessitates a more intensive study of developments in civil aviation within the Bloc. Apparently, civil aviation is being added to those enterprises increasingly subject to intensified competition between the Free World and the Communist Bloc.

It is important, therefore, to evaluate the expansion of the civil aviation networks of the Bloc and the effect of this expansion on the principles espoused by the Free World, particularly on the position of the US as a leader in world aviation. Czechoslovakia has been chosen as the first of the European Satellites for study because of its geographic location and its pivotal position in civil aviation with nations both inside and outside the Communist Bloc.

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POLICIES AND CAPABILITIES OF CZECHOSLOVAK CIVIL AVIATION\*

Summary

The policies and capabilities of Czechoslovak civil aviation reflect a dual adherence to the philosophies of Communism and to the concepts of international aviation of the Free World. Czechoslovakia became a member of the International Civil Aviation Organization (ICAO) when it was formed, and the Czechoslovak State Airlines (CSA) became a member of the International Air Transport Association (IATA) and also of the IATA Clearing House. With these ties to the West and a strong position in international aviation, Czechoslovakia had been able, by the time of the Communist coup in 1948, to develop an extensive airline network in Europe and the Middle East.

At present, CSA has an inventory of approximately 45 DC-3 type of aircraft and 3 Soviet-built jet transports acquired recently. It flies an intensive domestic schedule as well as international routes to most European capitals and is attempting to expand services to other parts of the world.

As a result of the Communist coup in February 1948, Czechoslovakia's position in international civil aviation deteriorated radically to a low point in 1953. A shortage of aircraft and spare parts, together with retaliatory political restrictions imposed by joint action of Western powers, cut the international routes of CSA to a few flights to other Satellite capitals and to one flight to Copenhagen in Western Europe. At the same time, CSA was being incorporated into the coordinated civil air network of the Sino-Soviet Bloc.

A change in over-all air policy of the USSR in 1954 started an upswing of the fortunes of CSA, with the granting of a reciprocal route to Moscow and the acquisition of the latest type of Soviet-built twin-engine reciprocating aircraft, the Il-14. Routes to Western Europe were regained, and additional routes in the Bloc were acquired.

Aggressive expansion in the Middle East indicates that Czechoslovakia will attempt to make good use of the Tu-104A, a 70-passenger jet aircraft acquired from the USSR in 1957 for long-distance routes. This aircraft, however, is not suitable for intercontinental routes such as those apparently contemplated to South America. Spokesmen for CSA are hopeful that they may acquire the new turboprop aircraft -- such as the

\* The estimates and conclusions contained in this report represent the best judgment of ORR as of 15 June 1958.

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An-10 (Ukraina) and the Il-18 (Moskva) -- from the USSR in the future. Equipped with competitive aircraft and having the advantages of membership in ICAO, as well as of the membership of CSA in IATA and in the IATA Clearing House, Czechoslovakia has the potential for achieving an important world position in civil aviation. Such a position, however, is dependent largely on future Soviet policy for civil aviation and the position that the USSR envisions for the individual members of the Sino-Soviet Bloc.

#### I. Developments in Civil Aviation in Czechoslovakia Before 1954.

Civil aviation in Czechoslovakia must be viewed against a background of the economic development of the Sino-Soviet Bloc as well as against the worldwide development of civil aviation. By decree on 14 September 1945 the Czechoslovak government established the Czechoslovak State Airlines (Ceskoslovenske Statni Aeroline -- CSA). This government-owned carrier absorbed the assets of three prewar air transport companies. 1/\* One of the three, the original state-owned CSA, had been established as an agency of the Ministry of Public Works and inaugurated scheduled air service in 1923. The other two carriers were owned privately.

Between September 1945 and February 1948, Czechoslovakia acquired an important position in European civil aviation as well as in the International Civil Aviation Organization (ICAO). As one of the signatories of the Chicago Convention, Czechoslovakia accepted the Interim Agreement and the Transit Agreement and became one of the 20 members of the original Council of the Provisional International Civil Aviation Organization (PICAO). 2/ In 1947, when PICAO became ICAO, Czechoslovakia deposited an instrument of ratification in Washington to become a member. CSA also became a member of IATA, which has 72 active member airlines, and is one of the 53 member airlines of the IATA Clearing House, the headquarters of which is in London. 3/ With these ties to the West and with a strong position in international aviation, Czechoslovakia was able by 1948 to develop an extensive airline network in Europe and the Middle East. (See Figure 1.\*\*)

#### A. Effects of the Communist Coup on Operations of CSA.

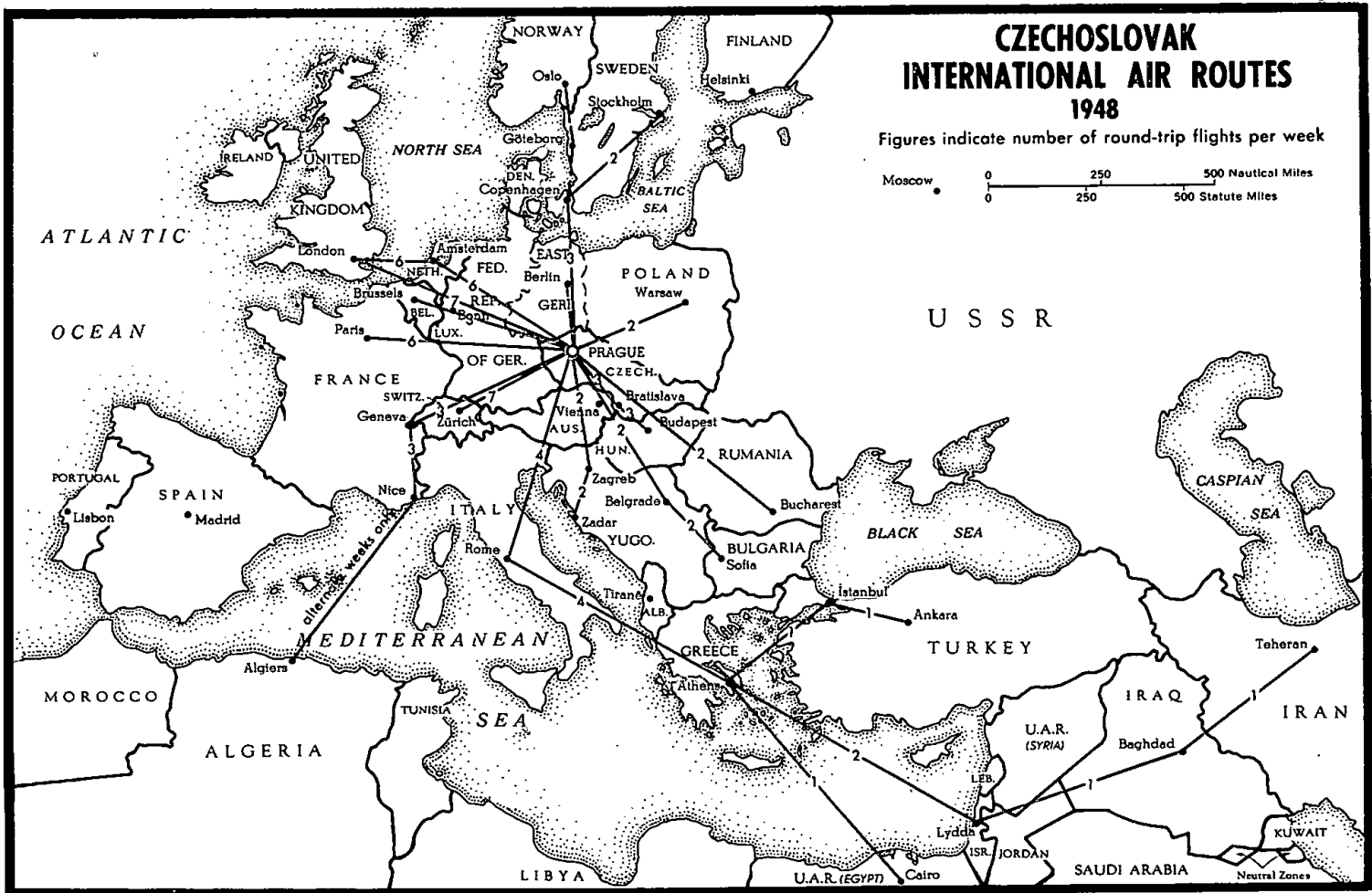
The Communist coup of 25 February 1948, which put Czechoslovakia in the Communist Bloc, had adverse effects on the external

\*\* Following p. 2.

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Figure 1



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operations of CSA. From 1948 to 1953, Czechoslovakia was cut off progressively from contact with aviation outside the Sino-Soviet Bloc and underwent a process of absorption into a coordinated network of airlines within the Bloc. Soon after the Communist seizure of power, Czechoslovak business and tourist contacts with the West were curtailed, and a decline in international flights followed. This decline was accelerated by the promulgation in 1949 of the joint US-UK policy on Satellite aviation which had as its objectives the restriction of Soviet and Satellite airlines to Bloc airspace, the interdiction of Satellite services to the Middle East, and the denial of equipment from Western sources.

Difficulties in procuring aviation fuel and lubricants, as well as shortages of spare parts that began to be felt in 1949, were subsequently compounded in 1950 by adverse political developments which had a strong impact on operations of CSA. The civil air route to Lydda via Athens, set up by Czechoslovakia to aid Israel in the Israeli-Arab war, antagonized the Arab countries. Lebanon and Egypt, as a result, refused landing rights to CSA. Turkey and Greece, moreover, although comembers with Czechoslovakia of ICAO, found grounds for refusing transit and overflight privileges. These moves halted the operations of CSA to the Middle East.

The subsequent decline of traffic forced the abandonment of schedules to Nice and Oslo as unprofitable. Loss of European routes which followed hinged on economic as well as on political factors. The lucrative route from Prague to London was lost to CSA because British European Airlines (BEA) found its operations in Prague restricted by regulations which made the British share of the operation economically unsound. Czechoslovak privileges in the UK therefore were canceled. In addition, the US, the UK, and France prohibited flights over West Germany. This measure effectively stopped the services of CSA to Brussels, Amsterdam, Paris, and Zurich. Later, in the autumn of 1952, CSA was forced to suspend services to Stockholm and Helsinki because of difficulties in obtaining gasoline in the Scandinavian countries. By 1953, therefore, the external air routes flown by Czechoslovakia were reduced to flights to the neighboring Satellite capitals of Sofia, Budapest, and Bucharest; to flights to the Soviet sectors of Berlin and Vienna; and to an uneconomic route from Prague to Copenhagen -- its only link with Western Europe. (See Figure 2.\*)

B. Effects of Change in Civil Air Policy of the USSR.

In 1954 the USSR reversed its policy which had excluded all foreign airlines, including those of the European Satellites, from

\*\* Following p. 4.

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Soviet airspace. Until that time, the USSR had exercised control over civil aviation in the Sino-Soviet Bloc by participation in joint air carrier companies set up with certain of the European Satellites, Communist China, and North Korea. Although CSA did not fall into the category of a joint airline, Czechoslovak civil air operations were controlled by Soviet coordination of the entire network of the Bloc from Berlin to Peking and by the dependence of all airlines of the Bloc on the USSR for aircraft and ancillary equipment. The withdrawal of the USSR from ownership in the joint airlines in 1954 was followed by the conclusion of Soviet reciprocal air agreements with members of the Bloc and by an exchange of rights among the Satellites. Another facet of the new Soviet policy was the allotment to the Satellites of Soviet aircraft of the same type as that used by the Soviet carrier. Czechoslovakia, the most sophisticated of the Satellites in air operations, was given a route to Moscow and received the Il-14, the newest Soviet-built reciprocating twin-engine transport, to fly the route shared with Aeroflot. Not only did the operations of CSA become more closely coordinated with the European Satellites from 1955 on, but also Czechoslovakia regained some advantages, including routes to the West, through membership in ICAO and IATA. (See Figure 3.\*)

Czechoslovakia's membership in ICAO and IATA was used by the USSR at that time as a means of fostering movements outside the Sino-Soviet Bloc of citizens of Bloc countries. The IATA Clearing House, for example, furnished a means of booking citizens of Bloc countries for worldwide air travel. The regaining of its international routes by CSA, although apparently sanctioned under Soviet policy, largely depended on the willingness of the individual countries outside the Bloc to award routes to Communist Czechoslovakia. At the same time, competition among Western airlines for entry into Bloc airspace enhanced Czechoslovakia's position as an exchange point between the East and the West. With the resolution of certain political differences with the West, Czechoslovakia began to regain European routes, and, in addition, Prague attained importance as an exchange point for such services as the route from Paris to Moscow shared by Air France and Aeroflot and the route from Delhi to London serviced by Air India International. In October 1957, Czechoslovakia reinstituted with ID-14's joint operations with BEA Viscounts on the route from Prague to London, inactive since 1951. At the same time, CSA also initiated a new route to Tirana, Albania, with a short stop in Belgrade, Yugoslavia.

\* Following p. 4.

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Figure 2



Figure 3



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## II. Civil Air System.

### A. Organization.

The organizational statute of May 1949 defined the position of CSA within the framework of the newly established Communist government and made the carrier a semiautonomous agency of the government. The responsibility for operations of CSA was vested in a general manager appointed by, and directly responsible to, the government. The Ministry of Transport through its aviation component, the Department of Civil Aviation, which was previously charged with full responsibility for CSA, was not given a voice either in the selection of the general manager or in the conduct of operations of CSA, although it retained control of basic policy and planning decisions and of jurisdiction over aircraft and licensing of personnel.

In his capacity as the central authority for operations of CSA, the general manager was given almost complete freedom of action. Consultative, advisory, and other checks formerly exercised by the Ministry of Transport were abolished by the organizational statute. 5/ On 1 August 1956, all connections with the Ministry of Transport were severed, and CSA was established as an independent national enterprise directly under the Council of Ministers. 6/

The organization of civil aviation follows the same pattern throughout the Sino-Soviet Bloc. In the USSR, for example, the Civil Air Fleet of the Council of Ministers not only embraces the operations of the civil air carrier, Aeroflot, but also covers a host of other services to agriculture, forestry, and fisheries; ambulance and medical services; and exploratory flights for oil and minerals.

In May 1951, representatives of the airlines of the European Satellites met to plan a coordinated program for civil aviation. The group set up a policy under which the airline of each country would make a circuit of several major cities instead of single-stop round trips. Such an arrangement, they believed, would result in economy of gasoline and of aircraft. 7/ The airlines represented were Deutsche Lufthansa, East Germany; the Czechoslovak State Airlines (Ceskoslovenske Statni Aeroline -- CSA); the Hungarian airline (Magyar Legikozlekedesi Vallalat -- MALEV); the Bulgarian carrier (Transportno-Aviatsionnoye Bolgaro-Sovetskoye Obshchestvo -- TABSO\*); the Polish line (Polskie Linie Lotnicze -- commonly referred to as LOT); and the Rumanian carrier Transporturi Aeriene Romine -- TAROM).

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\* The airline retains the name indicating joint ownership by the USSR and Bulgaria even though the USSR withdrew from the company in 1954.

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Since 1951, representatives of the Satellite airlines have met twice a year with officials of Aeroflot. These annual spring and fall meetings apparently have resulted in approval of the summer and winter schedules for the group, as well as of measures to improve passenger service. At the meeting which convened 1 September 1957 in Bucharest, the six Satellite airlines, with a representative of Aeroflot present as an observer, studied "the commercial, financial and technical activities of the six airlines during the first half of 1957." As a result, an agreement of technico-scientific collaboration was concluded. 8/

By 1958 the six European Satellite airlines began the implementation of an arrangement for pooling resources which had been set up under a multilateral agreement signed in Budapest on 8 June 1957. Until that time, all the agreements had been of a bilateral nature. At a meeting in Sofia early in 1958, detailed measures were adopted to cover development of routes, interline traffic, and advertising. 9/ The pooling arrangement decided on at that conference resulted in a closely coordinated organization of Soviet and European Satellite airlines which is somewhat allied to but not too close a counterpart of the European Consortium envisioned by Italy and submitted to the Council of Europe in 1951. 10/

The close coordination of services throughout the Sino-Soviet Bloc redounds to the disadvantage of the airlines concerned if there is any hindrance to operations in one of the countries. During the Hungarian uprising, for example, international air services of the Bloc came to a complete standstill at the Hungarian border, and all flights to Hungary or beyond were disrupted for more than a month.

## B. Routes.

### 1. Domestic.

Czechoslovakia offers frequent service on a network of domestic flights from Prague to Bratislava, Sliac, Tatry, Presov, Kosice, Brno, Ostrava, and Gottwaldov. 11/ (See Figure 4.\*) In 1956 this unduplicated domestic network of routes amounted to 1,868 kilometers (km). 12/ The routes consist of short hops, the longest single flight of which is that from Prague to Kosice via Bratislava, a distance of 700 km. 13/ Such a pattern for air service is uneconomical in operation.

### 2. International.

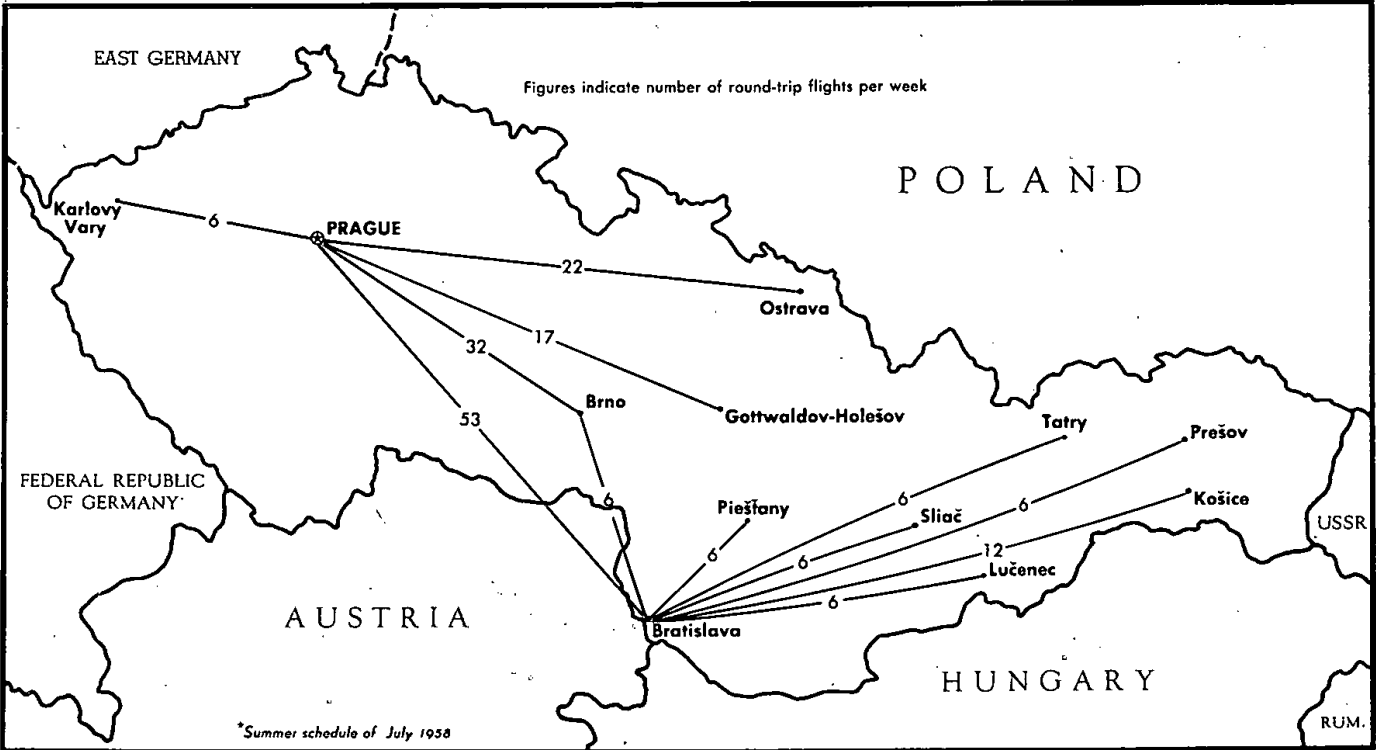
The international flights of CSA have undergone wide fluctuations under Communist control. 14/ From a network of 18,422 km in

\* Following p. 6.

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CZECHOSLOVAK DOMESTIC AIR ROUTES, 1958\*

Figure 4



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1948 comprising routes to 9 countries of Western Europe and 5 countries of the Middle East, the total length of flights fell to 3,571 km in 1953 with only 1 route to the West. In 1954 a gradual increase in external operations began, and at present 11,212 km of routes are being operated as a result of CSA regaining its former European routes. There is the prospect that routes to the Middle East will be regained and that these may be extended to India and possibly to Indonesia. Also, there is a possibility that the routes to Western Europe flown by CSA may be extended to South America. 15/

Prague has been designated as an exchange point for long-distance routes of international air carriers. Air France and Aeroflot, for example, use Prague as a junction on the route from Paris to Moscow. 16/ The Royal Dutch Airlines (Koninklijke Luchtvaart Maatschappij -- KLM) stop at the Czechoslovak capital on the route from Amsterdam to Cairo via Prague and Beirut. 17/ Air France includes Prague on its route to the Far East -- Paris to Hong Kong via Prague, Beirut, Karachi, Bangkok, and Saigon. 18/ Air India International initiated a stop at Prague on its service between Delhi and London in April 1956. 19/ Even the other Satellite airlines plan routes to the West via Prague. The Hungarian carrier MALEV has announced a flight from Budapest to Amsterdam with a stop at Prague. 20/ Also, Prague is a stop on the coordinated route of the Sino-Soviet Bloc to Peking. CSA and Aeroflot share in the segment from Prague to Moscow; Aeroflot flies the segment from Moscow to Irkutsk; and Aeroflot and Minhaiduy, the Civil Air Fleet of Communist China, share the segment from Irkutsk to Peking. This route is serviced with Tu-104 jet transports, making it possible to speed key personnel and strategic goods throughout the Bloc and to Western Europe.

### C. Air Facilities.

In order to appraise the capabilities of a given country for civil aviation operations, it is necessary to survey briefly the air facilities. Jet aircraft necessitate new standards of length, type of surface, and weight-bearing capacity of runways. Czechoslovakia has 78 airfields of which 16 meet the specifications of major\* airfields. 21/ Seven of the airfields have runways of 8,200 feet or longer.\*\* Ruzyne, the civil airfield at Prague, has 4 runways, the largest of which is 8,000 feet by 190 feet. It is being used at present by the jet transport Tu-104. 22/

\* The term major is applied to an air facility with a hard-surfaced runway of 6,000 feet or more in length.

\*\* The length of 8,200 feet is considered the minimum length for a runway servicing jet aircraft.

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The most important addition to these facilities now under construction is an airfield at Mosnov. This installation is believed to have a concrete runway of 11,500 feet by 260 feet, with a projected weight-bearing capacity of 365,000 pounds.

D. Inventory of Aircraft.

As of 1 January 1958 the inventory of CSA, including only 2-engine transports, consisted of 21 DC-3's, 7 Li-2's,\* 8 Il-12's, 10 Il-14's,\*\* 23/ and 3 Tu-104A's.\*\*\* 24/ CSA, like other airlines of the Sino-Soviet Bloc, is in a transition period as far as aircraft are concerned. The airline has operated with obsolescent, slow DC-3 type of aircraft with a capacity of 18 to 21 passengers, whereas, for more than 10 years, airlines in the West have had 4-engine aircraft capable of flying at greater speeds and of carrying 60 to 100 passengers. The Il-12, a Soviet-built replacement for the Li-2, was never satisfactory. It had aerodynamic difficulties and a capacity for only 18 instead of 40 passengers as originally planned. The first Il-14's received from the USSR were used on external routes such as the flights to Moscow, and the Il-12's, the DC-3's, and the Li-2's were relegated to domestic operations. 25/ The later Il-14's, however, with accommodations for 24 passengers, 26/ and the Avia 14, the Czechoslovak-built version of the Il-14, which seats 32 passengers, 27/ have been more satisfactory. These aircraft will be used on flights of CSA to London until the Tu-104 is approved for operations at a London airport. 28/ The Tu-104A jet transports, recently acquired from the USSR, seat 70 passengers and are designed for operations to Beirut; Cairo; Paris; and, later, London, provided the noise characteristics are acceptable when tested by the British. Apparently, CSA hopes to receive from the USSR in the future the more economical 4-engine turboprop transports such as the An-10 (Ukraine) with a capacity of 84 to 126 passengers and the Il-18 (Moskva) with a capacity of 70 to 100 passengers. 29/ The high performance and increased capacity for passengers of these newly developed aircraft would give CSA a real capability for competition in international operations.

Spare parts from Western sources have not been available to airlines of the Sino-Soviet Bloc, because of prohibitions enforced by the US Munitions List and rulings of COCOM. Recently the US opposed making an exception of Czechoslovakia in allowing the UK to send a shipment of spare parts for Czechoslovak aircraft because of the consideration that civil aviation transports in the countries of the

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\* Soviet-built version of the DC-3.

\*\* A reciprocating twin-engine transport with a capacity for 18 to 26 passengers.

\*\*\* A twin-engine jet medium transport with a capacity for 70 passengers, an improved version of the Tu-104.

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Bloc are a direct adjunct to the military air arm. 30/ Czechoslovakia's acquisition of new Soviet aircraft, however, will reduce the need for spare parts from the West and will lower the vulnerability of CSA to Western controls. Some NATO countries recently have made available certain aids to navigation and communications equipment to Western airlines using the airport at Prague so that these lines would have the advantage of landing equipment meeting the standards of ICAO.

#### E. Trends in Performance and Service.

Czechoslovak statistics show that, in 1957, CSA carried 293,000 air passengers -- 60,000 were on international and 233,000 were on domestic air routes. 31/ Services on the Czechoslovak domestic air routes may be compared with Allegheny Airlines, a US carrier using principally the DC-3 type of aircraft. Allegheny Airlines, for example, with a fleet of 15 DC-3's and 7 Martin 202's,\* carried 440,000 passengers in 1957. 32/ Counting only the DC-3's, the Li-2's, and the Il-12's in the inventory, CSA has a total of 36 aircraft as against 22 for Allegheny Airlines; yet the number of passengers flown by CSA on domestic routes is only 53 percent of the total number flown by Allegheny. The director general of CSA, although reporting a gain of 19 percent in over-all traffic in 1957, complained that costs had remained high because of low utilization of equipment, which averaged only 4 to 5 hours per day. 33/ This utilization is to be compared with an average of 6 hours per day in the US for 2-engine aircraft and 8.5 hours per day for 4-engine aircraft.

During 1958, however, CSA expects one of the largest gains in traffic in its 35-year history. 34/ The spokesman for CSA stated that Tu-104A's and additional Il-14's would go far toward solving the problem of underequipment "which during recent years has forced CSA to lag behind foreign carriers with which it formerly competed successfully." 35/

Performance of CSA has fluctuated greatly, particularly in the period from 1948 to 1958. (For data on the years 1946-56, see the table.\*\*\*) In 1946 and 1947, both passenger-kilometers and ton-kilometers increased rapidly. Performance for 1948 began to show the effect of the Communist coup in February of that year. Passenger-kilometers decreased from the previous year although ton-kilometers increased slightly. Between 1949 and 1953, external routes were curtailed radically -- a fact which probably indicates that domestic flying must have been intensified to account for the slight but steady

\* Capacity 36 to 40 passengers.

\*\* The table follows on p. 10.

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Table

Civil Air Transport Traffic in Czechoslovakia a/  
1937 and 1946-56 .

Year	Passenger-Kilometers (Million)	Ton-Kilometers (Million)	Percentage of Increase or Decrease Over the Preceding Year		Index of Transport Traffic (1946 = 100)	
			Passenger- Kilometers	Ton- Kilometers	Passenger- Kilometers	Ton- Kilometers
1937	9.2	0.2			33.3	25.0
1946	27.6	0.8			100.0	100.0
1947	61.7	2.3	+123.6	+187.5	223.6	287.5
1948	54.0	2.7	-12.5	+17.4	195.7	337.5
1949	41.1	2.2	-23.9	-18.5	148.9	275.0
1950	46.1	0.6	+12.2	-72.7	167.0	75.0
1951	67.4	1.1	+46.2	+83.3	244.2	137.5
1952	63.7	1.8	-5.5	+63.6	230.8	225.0
1953	73.8	2.7	+15.9	+50.0	267.4	337.5
1954	76.8	2.8	+4.1	+3.7	278.3	350.0
1955	93.6	2.6	+21.9	-7.1	339.1	325.0
1956	116.9	3.3	+24.9	+26.9	423.6	412.5



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increase in passenger-kilometers. In fact, by the end of 1951, passenger traffic exceeded that before 1948.

An index based on the ton-kilometers performed in 1946 clearly shows the initial impact of Communist control. This index dropped from 338 in 1948 to 275 in 1949 and to 75 in 1950. At that time, routes to the Middle East were interdicted, and lucrative flights to London were cut off. The index of ton-kilometers performed has grown steadily from 1951 to 1956 inclusive, owing, first, to expansion within the Sino-Soviet Bloc and, second, to the success of CSA in regaining gradually the air routes to Western Europe.

## F. Finances.

### 1. General.

In Czechoslovakia, as throughout the Sino-Soviet Bloc, hidden subsidies and variations in operating conditions make it almost impossible to evaluate commercial enterprises solely on a basis of profit and loss. This difficulty is particularly true of Communist air transport operations, which are motivated more often by political considerations than by ratios of profit and loss. Considering the high cost of operating the two-engine reciprocating aircraft, even of such new types as the Il-14, as well as the high consumption of fuel by the jet transport Tu-104,\* the financial situation of CSA apparently is not good. CSA, however, as a member of IATA, must abide by international rates set up by that body and, as a member of the IATA Clearing House, must settle accounts for international travel on terms prescribed by that body. By reduction of fares on internal routes and by foreign exchange concessions, however, CSA has sought to expand its volume of business. In mid-1955, for example, airline fares were reduced one-fifth for round trip tickets used within 10 days of the date of issue. <sup>38/</sup> An adjustment of the exchange rate to attract tourists not only from countries within the Sino-Soviet Bloc but also from the Free World may stimulate air travel on CSA. The exchange rate of the koruna for travel is 14.34 per US \$1 as against the official rate of 7.20 korunas per US \$1. Further improvements in the financial position of CSA can be expected if Czechoslovakia is permitted to acquire the more efficient turboprop aircraft from the USSR.

### 2. Cost of Aircraft.

The prices at which Soviet-built aircraft are offered for sale have varied greatly depending on where the sale is to be made. The Tu-104, for example, was offered at Zurich in the spring

\* Estimated at 1,600 gallons of jet fuel per hour.

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of 1956 for US \$1.2 million, but the cost of producing the Tu-104 is estimated at US \$3.5 million. The Czechoslovaks probably paid at least US \$9 million for the 3 Tu-104A's. 39/

Prices on the other types of aircraft have been estimated as follows 40/:

Type of Aircraft	Cost	Number of Aircraft	Total
Li-2	\$206,000	7	\$1,442,000
Il-12	\$230,000	8	\$1,840,000
Il-14	\$330,000	10	\$3,300,000

The inventory of CSA, exclusive of the DC-3's, accounts for a total of US \$15,582,000.

### 3. Cost of Constructing Runways.

It is difficult to estimate the cost of constructing an airfield in Czechoslovakia because such variables as weather, topography, volume of earth to be moved, and other factors tend to influence the final figure. An attempt has been made, however, to arrive at the cost of constructing the 11,500-foot by 260-foot runway at Mosnov. For runway and taxiways the cost is estimated at approximately 363 million 1950 korunas. 41/ Converting this sum at the rate of 2 cents per koruna, the rate of exchange in 1950, the cost of runway and taxiways would be about US \$7.3 million. Using a factor of US \$1,000 per linear foot, the cost for construction of a comparable runway at a civil airport in the US in 1950 would be approximately US \$11.5 million.

## G. Evaluation of Efficiency of the System.

### 1. Efficiency of Operations.

Czechoslovakia operates one of the most advanced air carrier systems in the Sino-Soviet Bloc because of advantages gained from membership in international organizations. A United Press correspondent, who traveled from Moscow through the Satellites and made use of Bloc airlines as well as of Aeroflot, describes a flight from Prague to Vienna on CSA. The Il-12 aircraft used was equipped with all safety devices including seat belts and flashing No Smoking signs in Russian and Czech and, in general, followed standard international flying regulations. He compares the flight with operations by other members of the Bloc, particularly Hungary, and concludes with the following remark: "The Hungarians ... just don't seem to care. The highly industrialized Czechoslovaks still do, automatically." 42/

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Security regulations, adopted after a number of defections to the West between 1948 and 1952, have hampered efficiency. <sup>43/</sup> Regulations of CSA in May 1953, for example, <sup>44/</sup> specified that all passengers had to produce identity cards. This requirement meant that, to allow time for processing identification papers with the security police, reservations had to be made several days in advance. Another measure to halt defections was the rationing of fuel according to the length of the trip. This restriction prevented the most efficient use of the aircraft and actually increased the danger of accidents by not allowing a sufficient reserve of fuel in case of bad weather.

Obsolescent equipment also accounts for inefficient operations. A DC-3 operation in the US no longer can make money even with 21 to 28 passengers. The Il-14 has even more difficulty because it has a capacity for only 18 passengers and because in some of the Bloc countries this capacity is reduced further by the practice of setting aside seats for government priorities.\* Even the new Il-14's of Czechoslovak and East German manufacture, which have a seating capacity of 24 to 32 passengers, are said to be expensive to operate. Without considering administrative and airfield expenses, the cost of operating the East German Il-14 per flying hour is estimated to be 1,600 to 1,800 East German marks (Deutsche Mark East -- DME), whereas proceeds per flying hour amount to only 1,100 DME provided the seating capacity is fully utilized. <sup>45/</sup>

## 2. Efficiency of Personnel.

At the time of the Communist coup in February 1948 the flight crew of CSA consisted largely of Czechoslovak nationals who had served with the Royal Air Force during World War II. During subsequent years, frequent purges of personnel of CSA followed successive defections in aircraft of CSA and in other government-owned aircraft. By 1952, all personnel formerly with the Royal Air Force either had escaped or had been purged. <sup>46/</sup> To prevent further defections, an armed member of the Security Police flew as guard in the passenger department of aircraft of CSA. As a result, loyalty to the Communist Party overrode all other considerations in the assessment of efficiency of personnel, and the proficiency of pilots at that time was at a low ebb.

The conflict in ideologies between personnel trained in the West and those trained in the Soviet Bloc apparently was resolved in 1954, when the USSR liberalized its policy on air operations,

\* On every flight in Poland, one-third of the passenger capacity of the aircraft is reserved for government officials. Therefore, if the aircraft were filled to capacity, it would have only 12 paying passengers.

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coordinated the entire network of airlines within the Sino-Soviet Bloc, and standardized operations on all airlines using Soviet types of aircraft. Subsequently, Czechoslovak personnel engaged both in flight operations and in maintenance were trained in Moscow on Il-14 and Tu-104A aircraft, and, as procedures were improved, operational efficiency increased.

### III. Civil Air Policies.

As a result of its membership in ICAO and IATA, Czechoslovakia has attempted generally to base its policy in civil aviation on international principles adopted by ICAO. On the other hand, for the last 10 years, the nation has been a favored component of the closely coordinated air network of the Sino-Soviet Bloc by reason of its geographic position in Central Europe.

#### A. Agreements Registered with ICAO.

As of 1 January 1957, Czechoslovakia had the following bilateral agreements of the Chicago type\* registered 48/:

<u>Country</u>	<u>Date Negotiated</u>
Belgium	January 1937**
Denmark	May 1947
Finland	July 1949
France	July 1946
Netherlands	September 1947
Norway	May 1948
Poland	January 1946
Sweden	October 1947
Switzerland	September 1947
Turkey	March 1947
US	January 1946
Yugoslavia	March 1948

#### B. Air Agreements Within the Sino-Soviet Bloc.

When the USSR withdrew from the joint airlines in the European Satellites, Communist China, and North Korea, it was necessary for the USSR to put the air operations throughout the Sino-Soviet Bloc on a basis that would permit interchange within as well as outside of Bloc

\* In general, a reciprocal agreement in harmony with the type suggested by ICAO.

\*\* This bilateral agreement, although contracted before the Chicago Convention, was in harmony with its provisions and acceptable to ICAO.

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airspace. This development of more normal air relationships took place late in 1954 and early in 1955.

1. USSR.

A bilateral air transport agreement between Czechoslovakia and the USSR was signed on 26 February 1955. It provides for "regular flights by Czechoslovak and Soviet civil aircraft between Prague and Moscow." 49/

2. European Satellites.

The Czechoslovak Republic (CSR) and the German Democratic Republic (GDR) signed a civil air transport agreement on 8 August 1955. 50/ A series of bilateral agreements between the USSR and the Satellites and between the individual Satellites were signed about the same time. These agreements, all worded on a standard form, gave the Satellites access to Moscow and reciprocal air rights to one another's territory.

On 8 June 1957, representatives of Czechoslovakia, East Germany, Poland, Rumania, and Bulgaria signed a joint agreement for collaboration in the operation of scheduled air services. Previous agreements had been of a bilateral nature, but in the future services between the capitals of the signatory countries will be operated according to a plan drawn up jointly by these governments. 51/

- C. Air Agreements Outside the Sino-Soviet Bloc.

Czechoslovakia's absorption into Communist Bloc civil aviation brought about changes in some of its bilateral agreements with European countries, and its policy of aggressive expansion brought about negotiations for new agreements with countries outside the Sino-Soviet Bloc. By 1958, CSA had regained all European routes lost after the Communist coup of 1948. Efforts in other areas of the Free World have met with greater resistance.

1. Europe.

- a. Belgium.

In 1956, Czechoslovakia and Belgium renegotiated the bilateral agreement which these governments had concluded in January 1937. The new pact provided for further development of air traffic between the two countries. 52/ It was reported in January 1958 that the Tu-104A jet transport might be used on the flight from Prague to Brussels. 53/ In a schedule published in April 1958, CSA advertised service to Brussels on the Tu-104A. 54/

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b. France.

Service by CSA on the route from Prague to Paris, interrupted in 1951, was restored after the air agreement concluded between France and the USSR in July 1954 designated Prague as an exchange point on the flight from Paris to Moscow. Later, CSA shared the segment of the route between Prague and Paris with Air France. 55/

c. UK.

On 7 October 1957 a BEA Viscount arrived at Ruzyně Airport, Prague, inaugurating the first service since 1951 between London and Prague. At present, under temporary permits, both CSA and BEA operate service twice a week between these capitals. Reciprocal services in the future hinge on discussions held early in 1958 on the use of the Tu-104 at the London airport. Use of the jet aircraft will be forbidden until the noise level has been tested and found acceptable under UK standards. 56/

d. Sweden.

On 24 and 25 January 1957, representatives of Sweden and Czechoslovakia met in Prague to revise the agreement they had signed in October 1947. The new agreement regularized the flight of Scandinavian Airlines System (SAS) from Stockholm to Prague and allowed SAS to operate services to South America through Prague. Czechoslovak airlines continued to fly the routes from Prague to Berlin to Copenhagen to Stockholm and from Prague to Stockholm to Helsinki. 57/

e. Yugoslavia.

A delegation from Czechoslovakia negotiated an agreement for air transport with Yugoslavia in February 1956. 58/ CSA began service at once, and in April 1958 the Yugoslav Airlines (Jugoslovenski Aero Transport -- JAT) initiated service on the route which the two airlines share. 59/

2. Middle East.

Czechoslovakia has made strenuous efforts to enhance its influence in the Middle East through agreements allowing for extension of air routes, through the sale of air equipment, and through grants of technical aid and advisers.

a. United Arab Republic.

In 1957 a Czechoslovak government delegation concluded a new air transport agreement with Egypt, 60/ and an agreement with

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Syria was initialed in Damascus in July 1957 and approved on 16 December 1957. 61/ A couple of months later, with the formation of the United Arab Republic on 1 February 1958, the new government accepted these agreements in an arrangement with ICAO.

b. Lebanon.

Lebanon and Czechoslovakia initialed a bilateral agreement for air transport on 27 July 1957, 62/ and the agreement was implemented on 21 November 1957 with a temporary 30-day renewable authori-

c. Yemen.

The policy of the Soviet Bloc toward Yemen is apparent in its attempt to gain control of the Yemeni Airlines. The Bloc is believed to be urging a management contract and is providing replacement personnel (apparently mostly Czechoslovaks) to take over operations formerly performed by Swedish employees, who are leaving. 63/ Soviet and Czechoslovak pilots in Yemen to supervise assembly of Soviet military aircraft were used intermittently by Yemeni Airlines during the fall of 1957. It seems obvious that the Bloc will have a good opportunity to continue its penetration in Yemen and that CSA may profit by its operational experience to expand its influence in the area. 64/

3. South America.

In March 1958, Czechoslovakia approached France for permission for an aircraft of CSA to fly over France on a proposed special flight to South America. 65/ The French Foreign Office decided that it could not deny transit privileges to Czechoslovakia without violating its obligations under the Chicago Convention. 66/ Czechoslovakia also requested permission from Spain to land on Spanish territory en route to South America, but Spain refused. 67/ Czechoslovakia requested permission from Brazil to fly over that country and land an Avia 14 aircraft on a flight to be made in April. 68/ The Czechoslovak government already had obtained a temporary permit to use air facilities in Montevideo, Uruguay, on the proposed flight, 69/ and the Communist press had widely publicized the entire operation. On 23 March, before the reply from the Brazilian government was received, Prague announced cancellation of the flight because of difficulties involving technical stops en route. 70/

About 20 small aircraft of Czechoslovak manufacture, Super Aero-45's,\* have been sold in Argentina, but otherwise Czechoslovak

\* Small executive type.

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efforts to penetrate the aircraft market in South America have been largely unsuccessful. 71/

#### IV. Competitive Capabilities.

Czechoslovakia occupies a favored position within the organization of the Sino-Soviet Bloc because of its geographic location and because it is the first in line to receive new types of aircraft from the USSR. The sophistication of Czechoslovakia in civil air matters, resulting from length of experience and an association with Western countries in international aviation cooperation before being absorbed into the Communist Bloc, has given that nation an advantage over other European Satellites.

In comparison with countries outside the Sino-Soviet Bloc, however, Czechoslovakia does not stand high. CSA has not yet regained all the routes which it flew in 1948 and is far behind in aircraft and ancillary equipment. Even the Tu-104A jet aircraft, now in the inventory of CSA, is not an efficient aircraft and, with only two engines, is not suitable, by present standards, for intercontinental flights.

Czechoslovakia is dependent on Soviet policy decisions for the allotment of new aircraft and the receipt of the new turboprop transports, the An-10 and the Il-18, which personnel of CSA have announced as probable equipment on international routes in the future. 72/ The future of CSA is largely dependent also on Soviet plans for the Bloc as a whole. There is a question as to whether or not the USSR will join ICAO and Aeroflot become a member of IATA or whether Soviet air policy will continue to make use of Czechoslovakia's ties to the West as a means of accomplishing civil air exchanges outside the Bloc. Czechoslovakia's potential, though high, is circumscribed by planning of the Bloc, and its initiative in matters of civil aviation is hampered by the closely coordinated operation of the Bloc.

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## APPENDIX B

CHRONOLOGY OF CZECHOSLOVAK CIVIL AVIATION

February 1948	CSA under Communist Control
Effective June 1951	Prohibition of flights by CSA to London
September 1951	Prohibition of overflights of West Germany
1953	Low period of external operations for CSA
March 1954	Zhavoronkov's visit to Western installations followed by change in Soviet air policy
October 1954 - January 1955	Withdrawal of the USSR from joint ownership in the Satellite airlines
1954-55	Reciprocal air agreements between the USSR and the Satellites
April 1955	First flight of CSA to Moscow
March 1956	Opening to CSA of route to Belgrade via Budapest
April 1956	Initiation of Air India International stop at Prague en route to London
	Resumption of flights by CSA to Brussels, Amsterdam, and Zurich
October 1957	Resumption of flights from Prague to London
December 1957	Acquisition of Tu-104A aircraft

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